

CLIMATOLOGICAL DATA FOR MAY, 1913.

DISTRICT NO. 6, MISSOURI VALLEY.

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GENERAL SUMMARY.

There was great diversity in the weather of the different parts of the district, but in the main the conditions were favorable for farming and other outdoor pursuits. Freezing temperatures occurred in the early part of the month, except in Iowa, Kansas, and Missouri, but owing to the backwardness of vegetation no material damage resulted. In the western portion of South Dakota there was some loss of lambs on account of snow. During the last week of the month unusually hot weather prevailed, and the high temperature record for May was exceeded at many places. There was a period of excessively heavy rain over southeastern South Dakota, eastern Nebraska, northeastern Kansas, extreme northern Missouri, and western Iowa, but in western Kansas and most of that portion of Missouri south of the Missouri River the rainfall was deficient and crops were beginning to show the need of moisture at the end of the month.

A considerable number of severe local storms occurred. On the 14th a small tornado moved from about 10 miles south, and somewhat west, of McCool Junction, Nebr., northeastward to Germantown, Nebr. The storm passed mostly through a farming region, but it struck the northern portion of the town of Seward, destroying between 30 and 40 houses and killing 8 people. The total property loss was estimated at \$200,000. On the same day a tornado occurred at Council Bluffs, Iowa; it passed over practically the same territory that was visited by a tornado last Easter, but it was of small energy and caused only nominal damage. At Lebanon, Mo., a severe hail-storm occurred on the afternoon of the 17th. At 6 p. m. a dark cloud overspread the sky, and in 15 minutes the ground was white with hail; most of the stones were about the size of hazelnuts, but some of them were larger and measured three-fourths of an inch in diameter. The absence of wind prevented the breaking of glass in windows, but gardens and fruits were almost wholly destroyed. Banks of hail from roofs measured 18 inches in depth 24 hours after the storm. None of the characteristics of a tornado was present, and the storm did not extend much beyond the limits of the town. The rainfall amounted to 1.75 inches; most of the hail rebounded from the gauge and was not measured.

TEMPERATURE.

The temperature was below the normal in Montana and the Dakotas; it was practically normal in Iowa, and was above the normal in the remainder of the district. The greatest deficiency was in Montana and the greatest excess was in Kansas. In the district as a whole the areas of excess and deficiency were about equal in extent. There was no well-defined period in which the lowest temperatures occurred, but in Kansas and Missouri the greater number of stations had the coldest day between the 10th and the 20th, and in most of the rest of the drainage area the temperature was lowest at some time during the first 10 days. There was very little damage by

freezing weather, and in Missouri and Kansas the temperature did not fall to 32° . In Kansas, with the exception of May, 1902, this was the only May of record in which the temperature at some station did not go below the freezing point. An abnormally warm period prevailed through most of the last week of the month, and temperatures of 100° or higher occurred in localities of all the States comprising the drainage area, except Montana, Wyoming, and Colorado; at many places a new record for high temperatures in May was established. The highest temperature for the whole district was 107° at Lincoln, Kans., and the lowest was 2° at Norris, Wyo.—in the Yellowstone Park.

PRECIPITATION.

The precipitation was deficient in most of the district, but there was a well-defined region of excess embracing western Iowa, the northern counties of Missouri, extreme northeastern Kansas, and a large part of the States of Nebraska and South Dakota. In the eastern part of this region there were some unusually heavy rains; monthly totals of 9 inches or more occurred in several localities, and there were 24-hour falls of 2 inches at numerous stations. Most of the water was taken up by the soil and there was very little damage beyond a few washouts on roads in Kansas. Outside of the section of country in which the heavy rains occurred there was a very uneven distribution of the precipitation; at a few widely separated places monthly totals were above the normal, but as a rule they were deficient, and in some localities were as low as 10 and 12 per cent of the seasonal average. The rainy days were well scattered through the month, except in the lower part of the district, where the rains after the 21st were light and rather local. Notwithstanding the lack of the normal amount of precipitation in the greater part of the drainage area there appears to have been sufficient soil moisture, except in western Kansas, over the watersheds of the Gasconade and lower Osage Rivers, and along the Missouri River below Boonville, Mo., where there was considerable need of rain at the end of the month.

Snow fell in North Dakota, the Black Hills of South Dakota, extreme western Nebraska, and in all of the foothill and mountain country of the district.

RIVERS.

Mountain streams were rising at the end of the month, as the snow at moderate elevations had begun to melt rapidly. The stages of the Missouri River and its principal tributaries above Kansas City ranged from slightly below to slightly above the normal. Below Kansas City the tributaries were low and the main stream was 1 to 2 feet lower than a 40-year average for the month. At St. Louis the Mississippi was about 3 feet lower than a 50-year average for May. In none of the streams except the very small ones was there the usual fluctuation in the water level.

